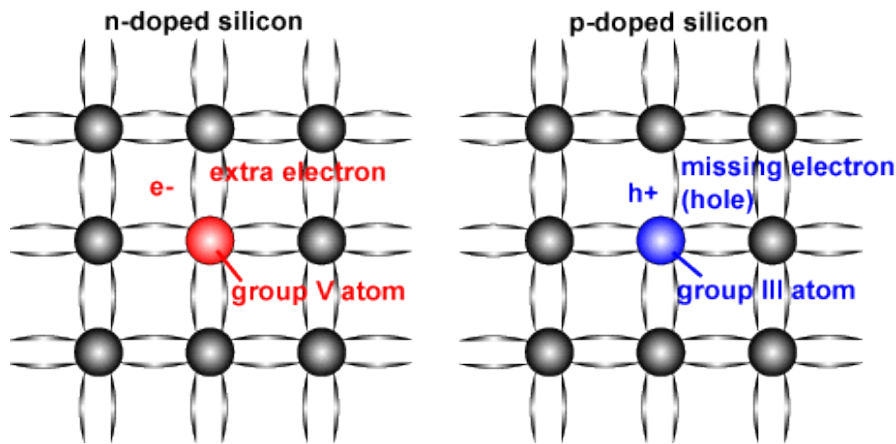
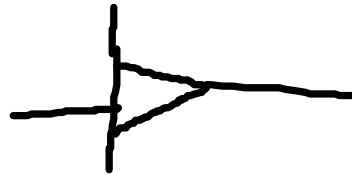


# Diodes

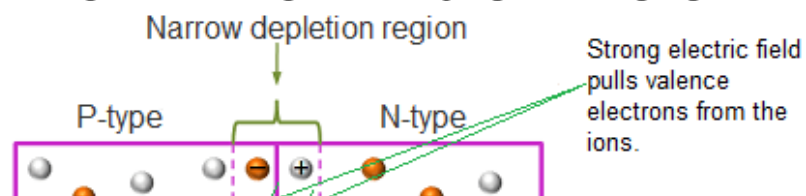


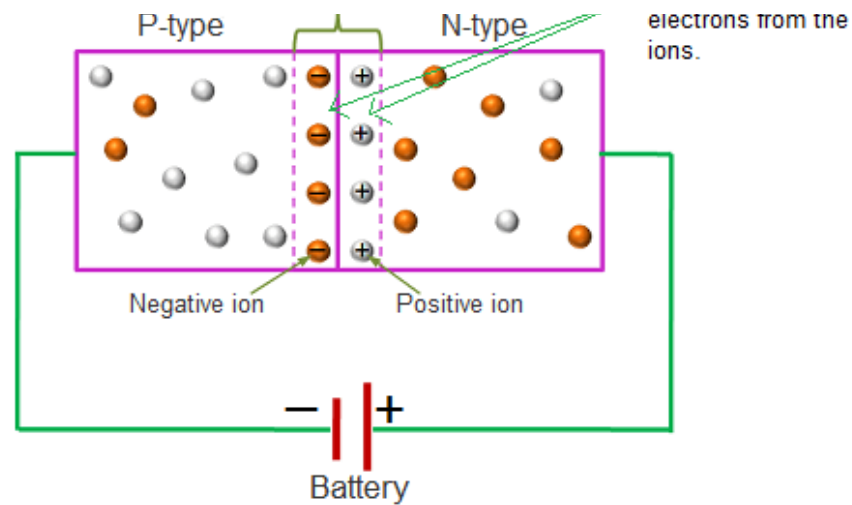
You build a diode using two parts of doped (add chemicals) silicon.

n-doped has extra electrons

p-doped has extra hydrogens (holes)

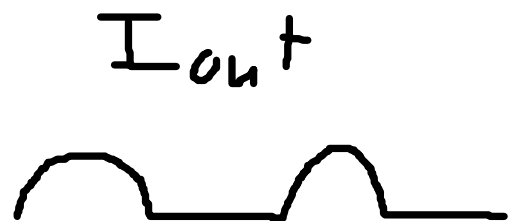
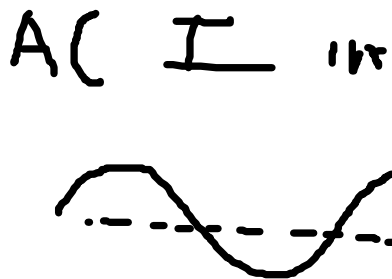
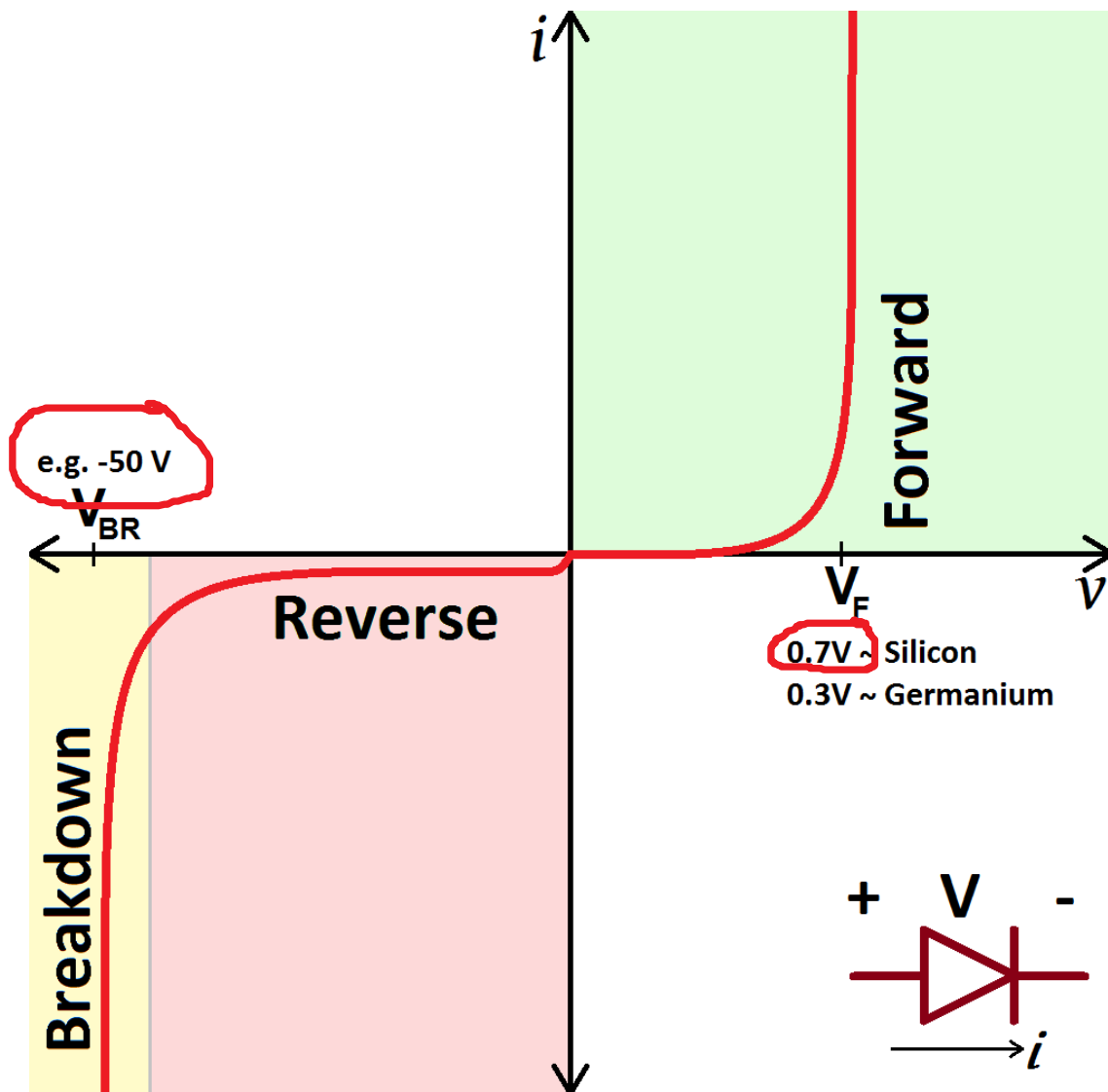
because you have extra electrons and hydrogen you get a potential "wall" between them





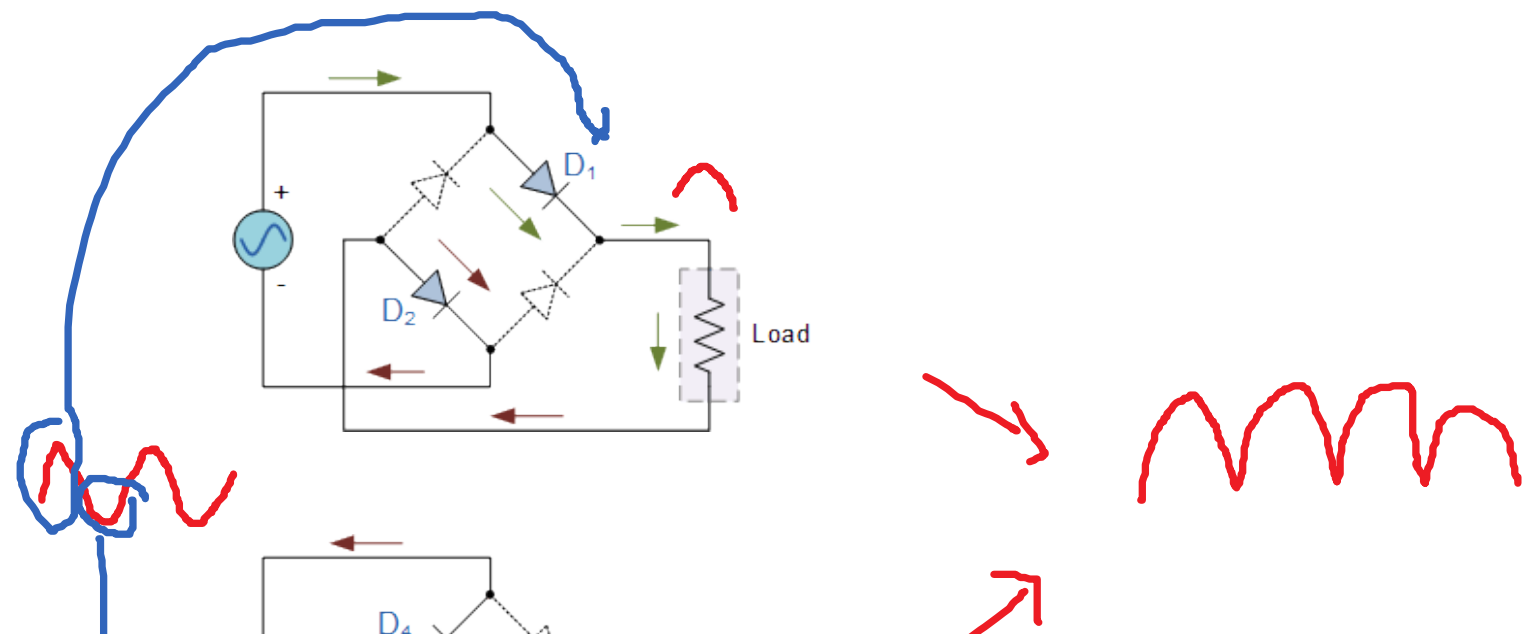
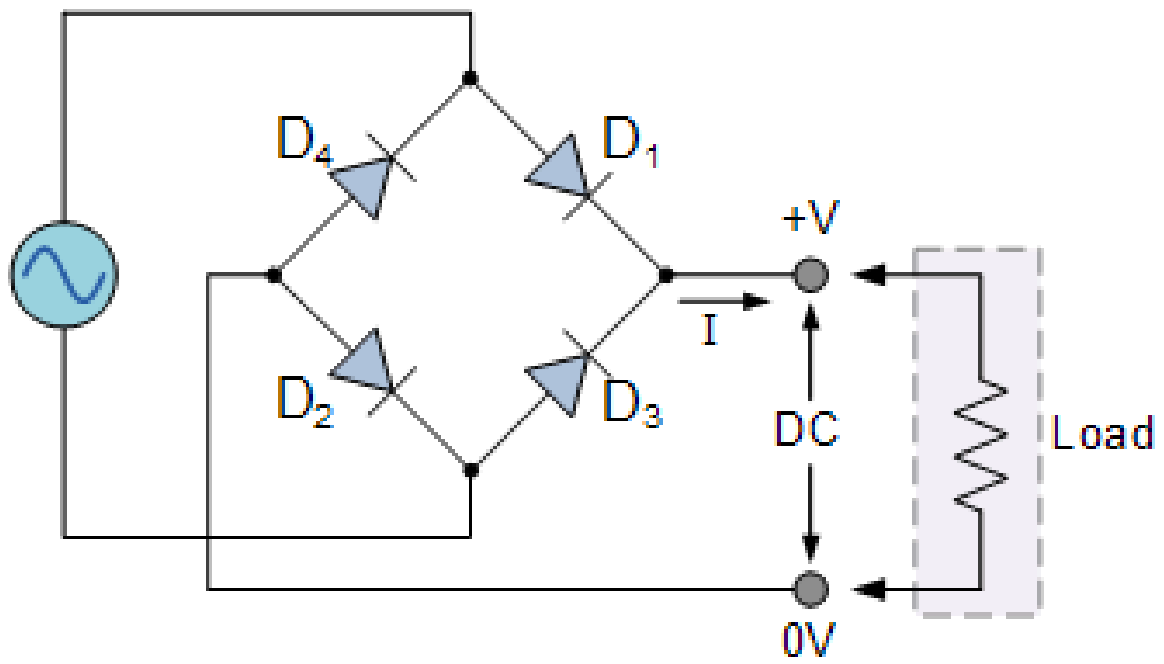
LED are light emitting diodes, so when the electron "drop" across the barrier they emit photons corresponding to the potential of the wall. Monochromatic light is produced (like laser but not coherent - not in phase).

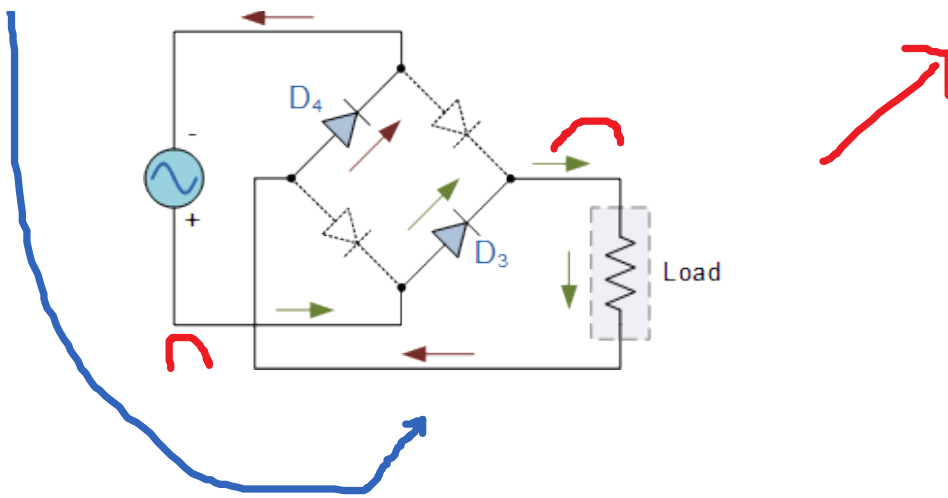
some diodes are used for AC-DC conversion - rectification.



in the flat bit (back current is blocked) you lose the energy

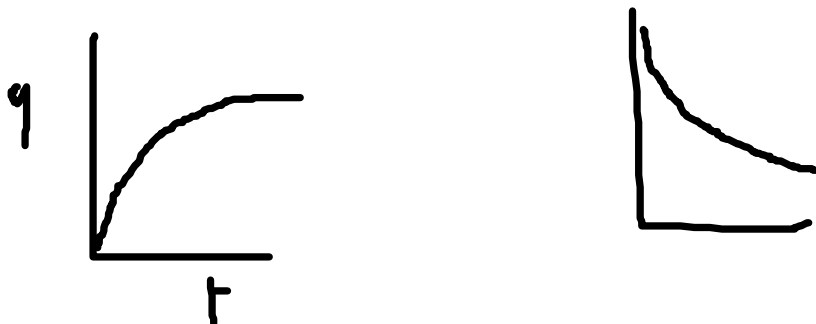






The diodes are set up to convert the sine function of the input current into all positive current  $|\sin|$

The current is smoothed by using capacitors that delay the current.



by taking time to charge and discharge, the capacitors

prevent the current from reaching the peak and 0.

1.